

UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. 99-481-A)

In the Application of:)	
)	Group Art Unit: TBD
Attenborough, et al.)	
)	Examiner: TBD
Serial No. TBD)	
)	
Filed: Herewith)	
)	
For: Spin-Valve Structure and Method for)	
Making Spin-Valve Structures)	

INFORMATION DISCLOSURE STATEMENT

Mail Stop Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to the duty of disclosure provided by 35 C.F.R. § 1.56 and §§ 1.97-98, the applicants wish to make the following references and information of record in the above-identified application. The references are also listed in the PTO-1449 form enclosed herewith. It is requested that the references and information be given careful consideration and that it be cited of record in the prosecution history of the present application so that they will appear on the face of the patent issuing from the present application. Pursuant to 37 C.F.R. § 1.98(d), copies of the references are not enclosed. These references were made of record in the parent application serial no. 09/351,419 filed July 9, 1999.

In the judgment of the undersigned, portions of the references may be material to the examination of the pending claims. No representation is intended as to the relative importance of any portion of the references. This Statement is not a representation that the cited references

have effective dates early enough to be "prior art" within the meaning of 35 U.S.C. §§ 102 or 103.

CITED REFERENCES

Foreign Patents

1. Published PCT application, publication no. WO 98/14793, published April 9, 1998.

Other Documents

1. Hart, R. and Schwarzacher, W., Magnetoresistance in Ni-Co-Cu/Cu Multilayers Electrodeposited onto (100) n-type Gallium Arsenide Substrates. 1046b Extended Abstracts. Fall Meeting (1993) Oct. 10/14, New Orleans 93/2 (1993) Pennington, NJ, US. Pgs. 406-407.
2. van den Berg, H.A.M., et al., GMR Sensor Scheme with Artificial Antiferromagnetic Subsystem. *IEEE Transactions on Magnetics*. 32: 4624-4626 (September 1996).
3. Schwarzacher, W., and Lashmore, D.S., Giant Magnetoresistance in Electrodeposited Films. *IEEE Transactions on Magnetics*. 32: 3133-3153 (July 1996).
4. Routkevitch, D., et al., Nonlithographic Nano-Wire Arrays: Fabrication, Physics, and Device Applications. *IEEE Transactions on Electron Devices*. 43: 1646-1658 (October 1996).
5. Chassaing, E. et al., Nanometric Cu-Co Multilayers Electrodeposited on Indium-Tin Oxide Glass. *Journal of the Electrochemical Society*. 146: 1794-1797 (1999).
6. European Search Report for Application No. 98870160.3-2208, dated 15.01.99.
7. Leal, J.L. and Kryder, M.H., Spin valves and exchange biased by Co/Ru/Co synthetic antiferromagnets, *Journal of Applied Physics*, Vol. 83, Number 7, dated April 1, 1998, pages 3720-3723.
8. R. Hart, M. Alper, K. Attenborough, W. Schwarzacher, "Giant Magnetoresistance in Ni-Co-Cu/Cu Superlattices Electrodeposited on N-Type (100) GaAs Substrates", Proc. of the 3rd Int. Sym. On Magnetic Materials, Processes and Devices (New Orleans) 94, 215-221, 1993, Electrochemical Society.
9. S.K.J. Lenczowski, C. Schönenberger, M.A.M. Gijs, and W.J.M de Jonge, "Giant Magnetoresistance of Electrodeposited Co/Cu Multilayers", *Jmmm* 148, (1995) 1-10.
10. J.C. Kools, "Exchange-Biased Spin-Valves for Magnetic Storage", *IEEE Transactions on Magnetics*, Vol. 32, No. 4., July 4, 1996, pages 3165-3184.

Respectfully submitted,

McDonnell Boehnen Hulbert & Berghoff

Date: Mar. 11, 2004

By:



Paul W. Churilla

Reg. No. 47,495

CERTIFICATE OF MAILING

The undersigned hereby certifies that the foregoing INFORMATION DISCLOSURE STATEMENT is being deposited as "Express Mail Post Office To Addressee", Express Mail label no. ER389544667US, postage prepaid, in an Express Mail envelope addressed to: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 11th day of March, 2004.



Paul W. Churilla
Reg. No. 47,495

FORM PTO-1449
(Rev. 2-32)

U.S. Department of Commerce
Patent and Trademark Office

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(Use several sheets if necessary)

Atty. Docket No.

99-481-A

Serial No.

TBD

Applicant:

Attenborough, et al.

Filing Date:

03/11/04

Group:

TBA

FOREIGN PATENT DOCUMENTS

		Document Number							Date	Country	Class	Subclass	Translation	
													Yes	No
		WO	98	1	4	7	9	3	04/09/98	PCT				

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc).

		Hart, R. and Schwarzacher, W., Magnetoresistance in Ni-Co-Cu/Cu Multilayers Electrodeposited onto (100) n-type Gallium Arsenide Substrates. 1046b Extended Abstracts. Fall Meeting (1993) Oct. 10/14, New Orleans 93/2 (1993) Pennington, NJ, US. Pgs. 406-407.
		van den Berg, H.A.M., et al., GMR Sensor Scheme with Artificial Antiferromagnetic Subsystem. <i>IEEE Transactions on Magnetism</i> . 32: 4624-4626 (September 1996).
		Schwarzacher, W., and Lashmore, D.S., Giant Magnetoresistance in Electrodeposited Films. <i>IEEE Transactions on Magnetism</i> . 32: 3133-3153 (July 1996).
		Routkevitch, D., et al., Nonlithographic Nano-Wire Arrays: Fabrication, Physics, and Device Applications. <i>IEEE Transactions on Electron Devices</i> . 43: 1646-1658 (October 1996).
		Chassaing, E. et al., Nanometric Cu-Co Multilayers Electrodeposited on Indium-Tin Oxide Glass. <i>Journal of the Electrochemical Society</i> . 146: 1794-1797 (1999).
		European Search Report for Application No. 98870160.3-2208, dated 15.01.99.
		Leal, J.L. and Kryder, M.H., Spin valves and exchange biased by Co/Ru/Co synthetic antiferromagnets, <i>Journal of Applied Physics</i> , Vol. 83, Number 7, dated April 1, 1998, pages 3720-3723.
		R. Hart, M. Alper, K. Attenborough, W. Schwarzacher, "Giant Magnetoresistance in Ni-Co-Cu/Cu Superlattices Electrodeposited on N-Type (100) GaAs Substrates", Proc. of the 3 rd Int. Sym. On Magnetic Materials, Processes and Devices (New Orleans) 94, 215-221, 1993, Electrochemical Society.
		S.K.J. Lenczowski, C. Schönenberger, M.A.M. Gijs, and W.J.M de Jonge, "Giant Magnetoresistance of Electrodeposited Co/Cu Multilayers", <i>Jmmm</i> 148, (1995) 1-10.
		J.C. Kools, "Exchange-Biased Spin-Valves for Magnetic Storage", <i>IEEE Transactions on Magnetism</i> , Vol. 32, No. 4., July 4, 1996, pages 3165-3184

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication.